

**TIME-DOMAIN WAVELENGTH INTERLEAVED NETWORK WITH  
COMMUNICATIONS VIA HUB NODE**

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**ABSTRACT**

A system and method are disclosed for time-domain wavelength interleaved networking that reduce the need for complex time-slot scheduling and reduce the routing complexity. Substantially all communications in the time-domain wavelength interleaved network pass through a hub node. In addition, interior nodes in the time-domain wavelength interleaved network will forward substantially all communications received from the hub node that are destined for another node on all branches outward from the hub node. The central hub node can impose a timing reference. Thus, the transmission and reception of a message can be synchronized such that a message sent in a time-slot  $k$  by a node  $N_i$  will be received by a node  $N_j$  in the time-slot  $k$ . Further, the hub node can recover from a link failure by shifting transmission times of all nodes that are separated from the hub node by the failed link.

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